1. Which of the following intervals describes the Domain of the function below?

$$f(x) = -\log_2(x+3) + 6$$

   A. $[a, \infty), a \in [4.8, 8.1]$

   B. $(-\infty, a), a \in [1.5, 5.8]$

   C. $(-\infty, a], a \in [-7.7, -3.1]$

   D. $(a, \infty), a \in [-3.1, -2.7]$

   E. $(-\infty, \infty)$

2. Which of the following intervals describes the Domain of the function below?

$$f(x) = e^{x+2} + 7$$

   A. $[a, \infty), a \in [-13, -2]$

   B. $(-\infty, a), a \in [7, 8]$

   C. $(a, \infty), a \in [-13, -2]$

   D. $(-\infty, a], a \in [7, 8]$

   E. $(-\infty, \infty)$

3. Which of the following intervals describes the Range of the function below?

$$f(x) = \log_2(x+3) - 6$$

   A. $(-\infty, a), a \in [4.4, 8.6]$

   B. $[a, \infty), a \in [0.6, 3.9]$

   C. $[a, \infty), a \in [-3.9, 0.8]$

   D. $(-\infty, a), a \in [-8.8, -5.8]$

   E. $(-\infty, \infty)$

4. Solve the equation for x and choose the interval that contains x (if it exists).

$$24 = \sqrt[3]{\frac{18}{e^{4x}}}$$

   A. $x \in [0.8, 2.9]$

   B. $x \in [-1.1, 0.5]$

   C. $x \in [-19.8, -17.9]$

   D. There is no Real solution to the equation.

   E. None of the above.

5. Solve the equation for x and choose the interval that contains the solution (if it exists).

$$5^{5x-3} = 64^{2x+4}$$

   A. $x \in [2.33, 3.33]$

   B. $x \in [-79.33, -76.33]$

   C. $x \in [5.15, 8.15]$

   D. $x \in [-26.87, -24.87]$

   E. There is no Real solution to the equation.

6. Solve the equation for x and choose the interval that contains the solution (if it exists).

$$2^{3x-3} = \left(\frac{1}{125}\right)^{4x+4}$$

   A. $x \in [-8.8, -6.3]$

   B. $x \in [-0.7, 2.1]$

   C. $x \in [16.5, 18.1]$

   D. $x \in [-1.3, -0.3]$

   E. There is no Real solution to the equation.

7. Which of the following intervals describes the Domain of the function below?
$$f(x) = -e^{x-7} - 5$$

   A. $(-\infty, a), a \in [-9, -4]$

   B. $[a, \infty), a \in [4, 9]$

   C. $(-\infty, a], a \in [-9, -4]$

   D. $(a, \infty), a \in [4, 9]$

   E. $(-\infty, \infty)$

8. Solve the equation for x and choose the interval that contains the solution (if it exists).
$$\log_5 (2x + 6) + 5 = 2$$

   A. $x \in [-119.5, -117.5]$

   B. $x \in [-125.5, -120.5]$

   C. $x \in [7.5, 17.5]$

   D. $x \in [-3, -1]$

   E. There is no Real solution to the equation.

9. Solve the equation for x and choose the interval that contains the solution (if it exists).
$$\log_4 (4x + 6) + 5 = 2$$

   A. $x \in [-1.8, 0.4]$

   B. $x \in [16.2, 21.4]$

   C. $x \in [1.6, 2.6]$

   D. $x \in [21, 23.7]$

   E. There is no Real solution to the equation.

10. Solve the equation for x and choose the interval that contains x (if it exists).

$$15 = \ln \sqrt[3]{\frac{14}{e^{6x}}}$$

  A. $x \in [-6.56, -2.56]$

  B. $x \in [-3.79, -0.79]$

  C. $x \in [-8.06, -6.06]$

  D. There is no Real solution to the equation.

  E. None of the above.